

### **REMARKS**

The Office Action of August 13, 2008, has been reviewed and the comments therein carefully considered. This application has been amended. The phrase "having one black color achromatic color selected from grayish white, gray, grayish black and black, which have been colored with a dye or a pigment" has been added to claims 1, 7, 9, 10 and 14. Support for this amendment can be found in original claim 2 as well as in the specification (as filed) on page 66, lines 4-8 and page 86, lines 3-7. Additional amendments have also been made to overcome the outstanding rejections under 35 U.S.C. §112, second paragraph as discussed below. No new matter has been added and claims 1-23 are pending.

#### **Rejections Under 35 U.S.C. §112, second paragraph**

Claims 1-23 stand rejected under 35 U.S.C. §112, second paragraph for lack of definiteness. Each of the rejections set forth in the Office Action is discussed below, with reference to the subheadings used in the Office Action:

a) With respect to claims 1, 2, 4, 5, 7-10, 14 and 21-23, it is alleged by the Examiner that the meaning of "monodisperse" is not clear. Applicants respectfully disagree. The term "monodisperse" is a term that is well known in the art as describing a collection of objects having the same size. For instance, Merriam-Webster online dictionary defines "monodisperse" as "characterized by particles of uniform size in a dispersed phase." (See <http://www.merriam-webster.com/dictionary/monodisperse>). Moreover, a search of the United States Patent and Trademark website for issued patents containing the term "monodisperse" in the claims turned up 505 hits. Clearly, monodisperse is not a term novel to the present application but is instead a common descriptor in the industry and relevant art. A claim term that is not used or defined in the specification is not indefinite if the meaning of the claim term is discernible, and such is the case when one skilled in the art would understand the claim with a reasonable degree of particularity and distinctness.

b) With respect to claims 1, 7-10 and 14, it is alleged that the meaning of "dissolving" is not clear. This term has now been removed from the claims. Removal of this term is not intended to affect the meaning of the claims.

c) Claims 2 and 8 were considered indefinite because the term "type" was vague and not defined. Applicants have deleted the term "type" from these claims for the sake of clarity and precision.

d) In claim 2, the objected-to term "these" has been replaced with "the dispersoid spherical colloidal particles", which was what "these" was intended to reference.

e) With respect to claims 2, 4, and 5, it is alleged that the meaning of "specific" is unclear. This term has been removed from these claims.

f) In claims 7-10 and 14, the term "it" was replaced with "the green sheet" to clarify the claims.

g) With respect to claims 12 and 18-20, it was alleged that the meaning of "deep-ditch" was not clear. Applicants have replaced "deep-ditch" with "groove" to more clearly convey the intended meaning of the claim. Support for this can be found, for instance, on page 101, at line 3 of the application as filed.

h) In claims 12 and 18-20, it was alleged that the meaning of "aspect ratio" is unclear. Applicants respectfully disagree. The term "aspect ratio" has a definite meaning in the art as the ratio of the longest dimension of the object to the shortest dimension of the object. (See, e.g., [http://en.wikipedia.org/wiki/Aspect\\_ratio](http://en.wikipedia.org/wiki/Aspect_ratio)). Since this term is used in the claim to describe a two-dimensional opening, it would be clear to one skilled in the art what the applicable "aspect ratio" is and how it would be determined.

In view of the foregoing, Applicants respectfully request reconsideration and withdrawal of the outstanding rejections under 35 U.S.C. 112, second paragraph. The claims define the subject matter with the reasonable amount of particularity and distinctness required by statute, and one skilled in the art could easily determine the metes and bounds of the claims.

#### Rejections Under 35 U.S.C. §103(a)

Each of pending claims 1-23 stands rejected under 35 U.S.C. §103(a) as being unpatentable over JP 2002-128600 to Takashi. Applicants respectfully traverse this rejection.

Initially, it is not believed that sufficient discussion is provided in the Office Action to support a rejection under 35 U.S.C. §103(a). The burden of establishing a *prima facie* case of obviousness lies initially with the Examiner. M.P.E.P. § 2142. "The key to supporting any rejection under 35 U.S.C. 103 is the clear articulation of the reason(s) why the claimed invention would have been obvious," and this analysis should be made explicit. *Id.* The Federal Circuit has stated that "rejections on obviousness cannot be sustained with mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness." *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006). In this case, the Office Action provides only a cursory discussion of the Takashi reference as it relates to the claims. The Office Action then summarily dismisses the claims as unpatentable by stating that "The '600 process appears to meet the limitations as claimed." (Office Action, page 3). Applicants further note that the purported rejection is under 35 U.S.C. §103(a), yet there is no discussion as to the differences between Takashi and the claims, nor is there any rationale supporting why one skilled in the art would find it obvious to modify Takashi or combine it with other art to overcome these differences. The Office Action also fails to address, or even mention, many of the claim limitations. "All words in a claim must be considered in judging the patentability of that claim against the prior art." *In re Wilson*, 165 USPQ 494, 496 (CCPA 1970); see also M.P.E.P. § 2143.03. The brief and conclusory discussion in the Office Action is clearly insufficient to meet the threshold required to support a rejection under 35 U.S.C. 103(a).

In any event, there are clear and significant distinctions between the Takashi document and claims 1-23 such that the claimed subject matter would not be obvious to one skilled in the art in view of Takashi. Takashi is directed to a method of creating an ordered-array optical material. (Abstract). The gaps between the particles can be filled with a polymer resin or an inorganic material. (Abstract). The particles of Takashi exhibit an opal color. (Takashi Translation, ¶¶ 0003-0004).

On the other hand, claim 1 recites fluid colloidal crystals comprising a solid-liquid colloidal dispersion containing monodisperse spherical colloidal particles as a dispersoid, wherein the monodisperse spherical colloidal particles have a black

color achromatic color selected from grayish white, gray, grayish black and black which have been colored with a dye or a pigment. As described on page 59 of the specification as filed, the colloidal particles are preferably of a black color type achromatic color so that the surface of the ordered structure can effectively absorb or reduce stray light, which is attributable to scattering or transmission of a part of the applied visible light. The reflected light color is clearer as a result. By using the colored colloidal particles, the three-dimensionally ordered lattice comprising these particles can develop a clear chromatic spectral diffraction color under irradiation with natural light or white light.

There is no teaching or suggestion in Takashi to use dispersoid spherical colloidal particles having a black color achromatic color or a particle that has been dyed by a pigment. Instead, Takashi teaches an opal colored particle, and does not discuss the use of a dye or pigment. One skilled in the art having read Takashi would not have expected the coloring of the particles to result in a more clear color. Consequently, claims 1-23 are patentable over Takashi and the outstanding rejection under 35 U.S.C. §103(a) should be withdrawn.

Objection to the IDS Submitted June 5, 2006


Two of the documents submitted by Applicants in their June 5, 2006 IDS were lined through, and presumably not considered during prosecution, because each document was listed on Form PTO/SB/08a by its application number rather than its publication number. As Applicants explained in the IDS, these documents were cited in the specification in terms of their application numbers. In order to avoid confusion, Applicants also identified the documents by their application numbers on the IDS. For each document, Applicants listed the date of publication and name of applicant. Applicants also submitted a copy of the publication of each of these documents as well as an English-language abstract thereof. Applicants believe this information is sufficient for these documents to be made of record in this case. Applicants respectfully request that the two documents that were lined through be considered and made of record. If it is preferred, please list these documents in terms of the publication numbers JP 2004-269922 (corresponding to application JP 2003-059210) and JP 2004-276492 (corresponding to application JP 2003-073123).

In addition, the Examiner initialed and returned only page 1 of the three-page IDS dated June 5, 2006. Applicants respectfully request that pages 2 and 3 of the June 5, 2006 IDS also be initialed and returned.

CONCLUSION

For all of the foregoing reasons, Applicants submit that the pending claims are patentable over the cited documents and are in condition for allowance. Accordingly, Applicants respectfully request reconsideration of the outstanding rejections and allowance of pending claims 1-23. Applicants also respectfully request that the two Japanese documents which were lined through in the IDS be made of record.

Respectfully submitted,  
THE WEBB LAW FIRM

By   
Kent E. Baldauf  
Registration No. 25826  
Attorney for Applicants  
436 Seventh Avenue  
700 Koppers Building  
Pittsburgh, PA 15219  
Telephone: (412) 471-8815  
Facsimile: (412) 471-4094  
E-mail: webblaw@webblaw.com